



SIGMA GROUP a. s.

Divize průmyslová čerpadla



SEWAGE PUMPS

**NFPH, NFVH, NFJH,
NFRH, NFPV, NFVV,
NFJV, NFRV, NFPW
NFVW**

**SIGMA GROUP a. s.
INDUSTRIAL PUMP DIVISION**

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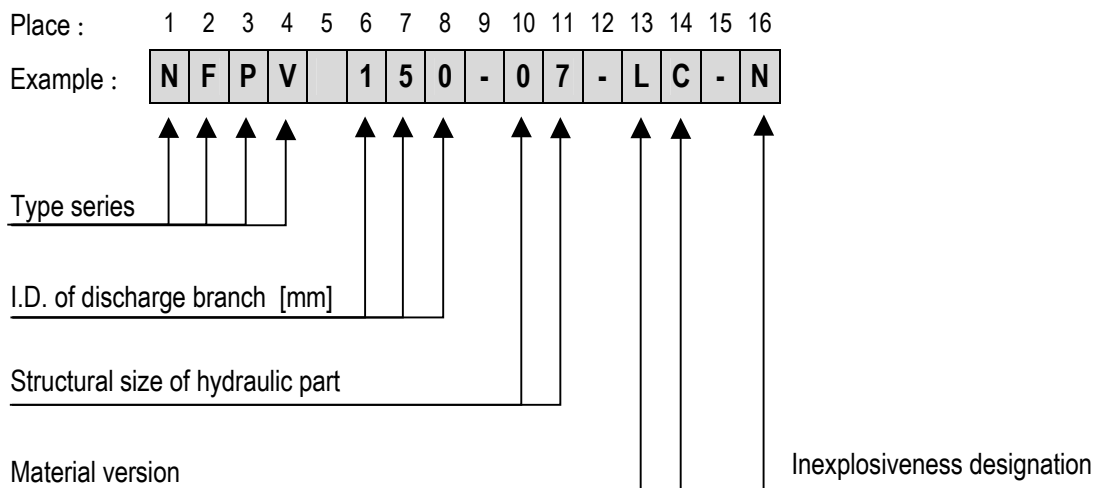
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SEWAGE PUMPS

SYSTEM OF SEWAGE PUMPS DESIGNATION

Generally, pumps designation includes designation of type series, nominal inside diameter of the discharge branch and technical specifications. The type series designation consists of letter denotation combined of four capital letters. Their understanding as well as technical specifications coding are stated hereinafter.



TYPE SERIES

1st place – basic design feature

N volute pump for dry pit installation

2nd place – meaning pursuant to pumped medium kind

F sewage pump

3rd place – impeller type

J single channel shrouded impeller

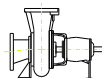
P two channel shrouded impeller

R vortex impeller

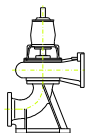
V multi-vane shrouded impeller

4th place – service location

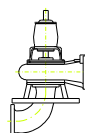
H Stationary installation in dry pit mounted horizontally on bearing pedestal



V Stationary installation in dry pit mounted vertically on bearing pedestal, with foot-bend anchorage



W Stationary installation in dry pit mounted vertically on bearing pedestal, with anchorage on volute baseplate



MATERIAL VERSIONS

13th and 14th places

LC	part	material
	stator parts, suction or discharge elbow	grey cast iron
	shaft and connecting material coming into contact with pumped liquid	stainless steel
	impeller	grey cast iron
	wear rings	chromium alloy
LU	stator parts, suction or discharge elbow	grey cast iron
	shaft and connecting material coming into contact with pumped liquid	stainless steel
	impeller	chromium cast steel
	wear rings	chromium alloy
JU	stator parts	special finish (e. g. grey cast iron with ceramic coating)
	other parts as in LU	

INEXPLOSIVENESS DESIGNATION

16th place

E Inexplosiveness version can be used in explosion hazard area

N Standard design is not intended for application in explosion hazard area

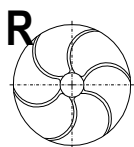
SEWAGE PUMPS

APPLICATION

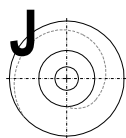
The sewage pumps are designed for pumping waste water, faeces and raw sludge containing little non-abrasive solids and fibres such as paper, rags, bandage cloth, leftovers as well as various street drains, or lower content of sand, ash, lump wood and other materials coming into sewerage system.

Max. density of pumped liquid 1200 kg/m³
Max. temperature of pumped liquid 80°C
Allowed range of pumped liquid pH-value 6,5-9 pH

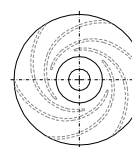
Other more unfavourable limiting factors and criteria shall be agreed upon by the purchaser and the manufacturer when considering particular service conditions.



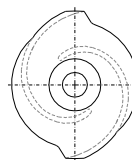
In the sewage pumps provided with the **vortex-type** impeller, no heavy abrasive wear occurs owing to solids. They are successfully used when pumping waste water with dissolved gas and fibres, and sewage and sludge.



Pump versions with the **single channel** impeller are characterized by good-sized passing diameter for soft lump and fibrous contaminants.



Pump versions with **multi-vane** impeller are intended for pumping slightly contaminated water with content of non-abrasive solids up to 2 vol. percent. **They have the highest efficiency.**



Due to sufficient passing diameter, the sewage pumps with **double channel** impeller can be used for pumping sludge and hydro-mixtures containing smaller solids. Compared with single channel impeller, it reaches **higher efficiency** and superior dynamic characteristics.

CASCADE CONNECTION

Pump application is extended by possibility to connect two pumps in serie for so-called **cascade pumping**. There are such situations, when single pump is not capable to overcome higher delivery heads. Therefore, it is favourable to connect two equivalent pumps by means of which considerably higher delivery head can be obtained – in practice double head with given capacity (flow rate). Total delivery head of the pumps connected in serie is limited by gauge pressure corresponding to PN 10.

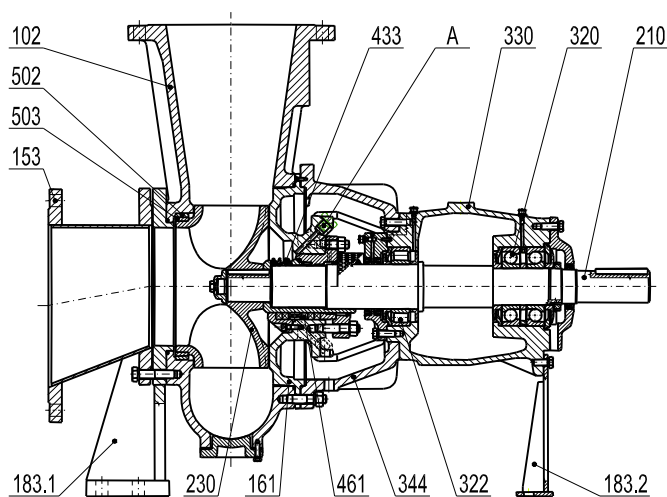
SEWAGE PUMPS

SEWAGE PUMPS DESIGN

The pump is intended for dry pit installation, it is designed in either horizontal or vertical version.

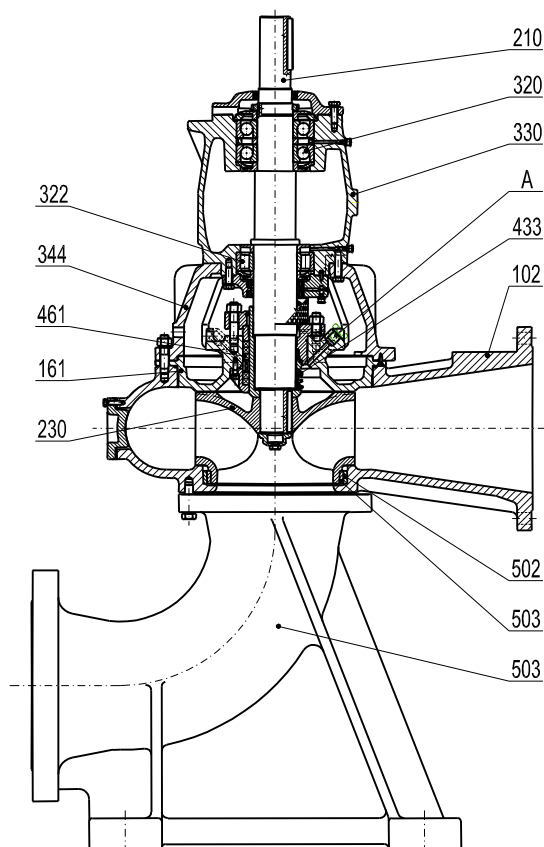
The pump is centrifugal single stage volute pump with optional impeller type. Bearings are grease-lubricated, with the horizontal version they are also oil-lubricated. Sealing is ensured with either soft cord packing or with mechanical seal. For flushing the seal, the pump is provided with G 1/2" orifice; clean water with temperature of approx. 20 °C and pressure 0,4 MPa is used for the flushing.

INFORMATIVE SECTION VIEW OF HORIZONTAL PUMP

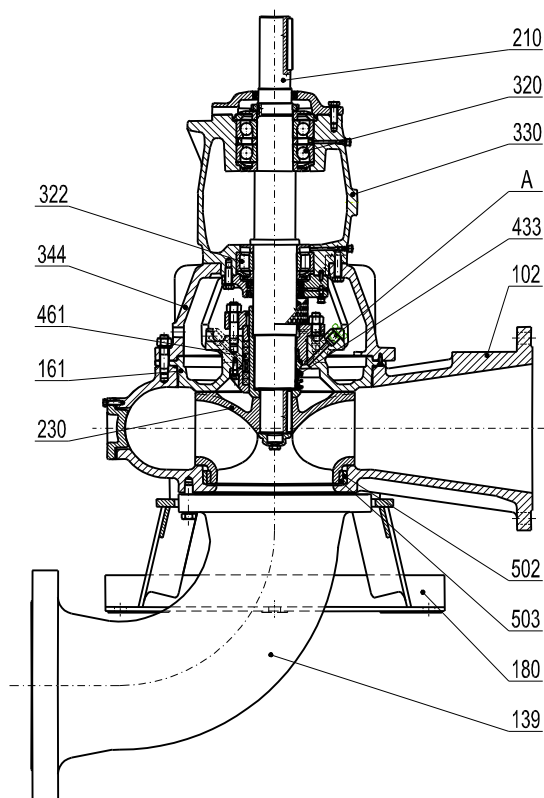


- | | |
|-------|--------------------------|
| 102 | Volute |
| 139 | Suction elbow |
| 153 | Suction branch |
| 161 | Partition |
| 180 | Stand |
| 183.1 | Foot |
| 183.2 | Foot |
| 210 | Shaft |
| 230 | Impeller |
| 320 | Bearing |
| 322 | Bearing |
| 330 | Bearing housing |
| 344 | Lantern |
| 433 | Mechanical seal |
| 461 | Soft gland packing |
| 502 | Wear ring, volute |
| 503 | Wear ring, impeller |
| A | Seal flushing connection |

INFORMATIVE SECTION VIEW OF VERTICAL PUMP



The pumps of series NFPV, NFVV, NFJV, NFRV are anchored on the suction foot-bend



The pumps of series NFPW, NFWW are anchored on the stand

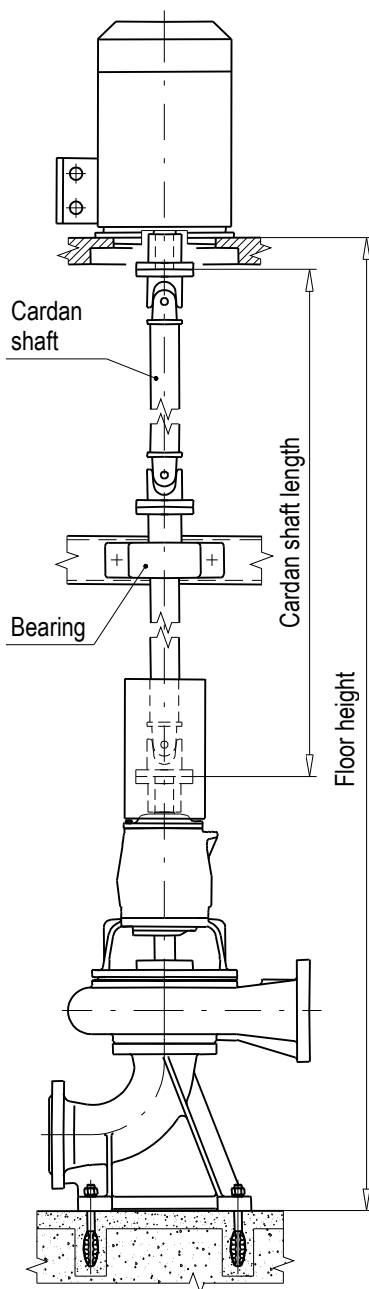
SEWAGE PUMPS

PUMP SET

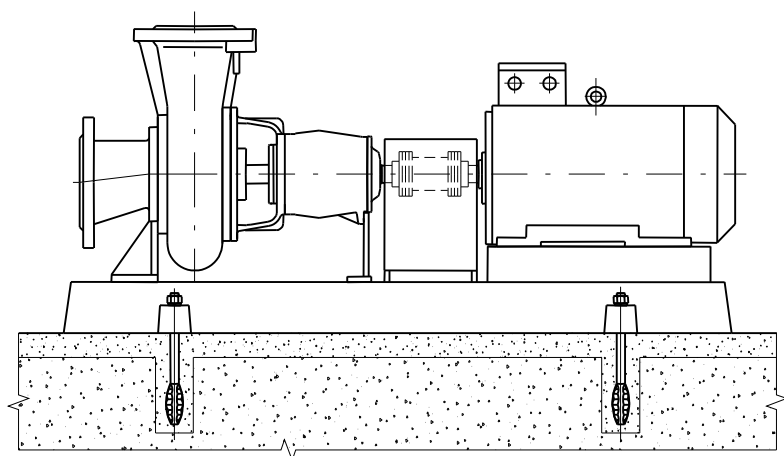
The pump is delivered either separately or in a pump set including the drive, the coupling and protective coupling guard. The pump set in horizontal version is delivered on the foundation frame.

The pump can be driven from an electric motor with frequency 50 Hz or 60 Hz, diesel engine or electric motor with frequency converter. Pump set maximum speed is 1770 min^{-1} .

For torque transmission to an arbitrary distance the cardan shaft may be used. To avoid vibration of long-sized cardan shaft, the latter is assembled of several pieces, some of which are supported with a bearing or a number of bearings.



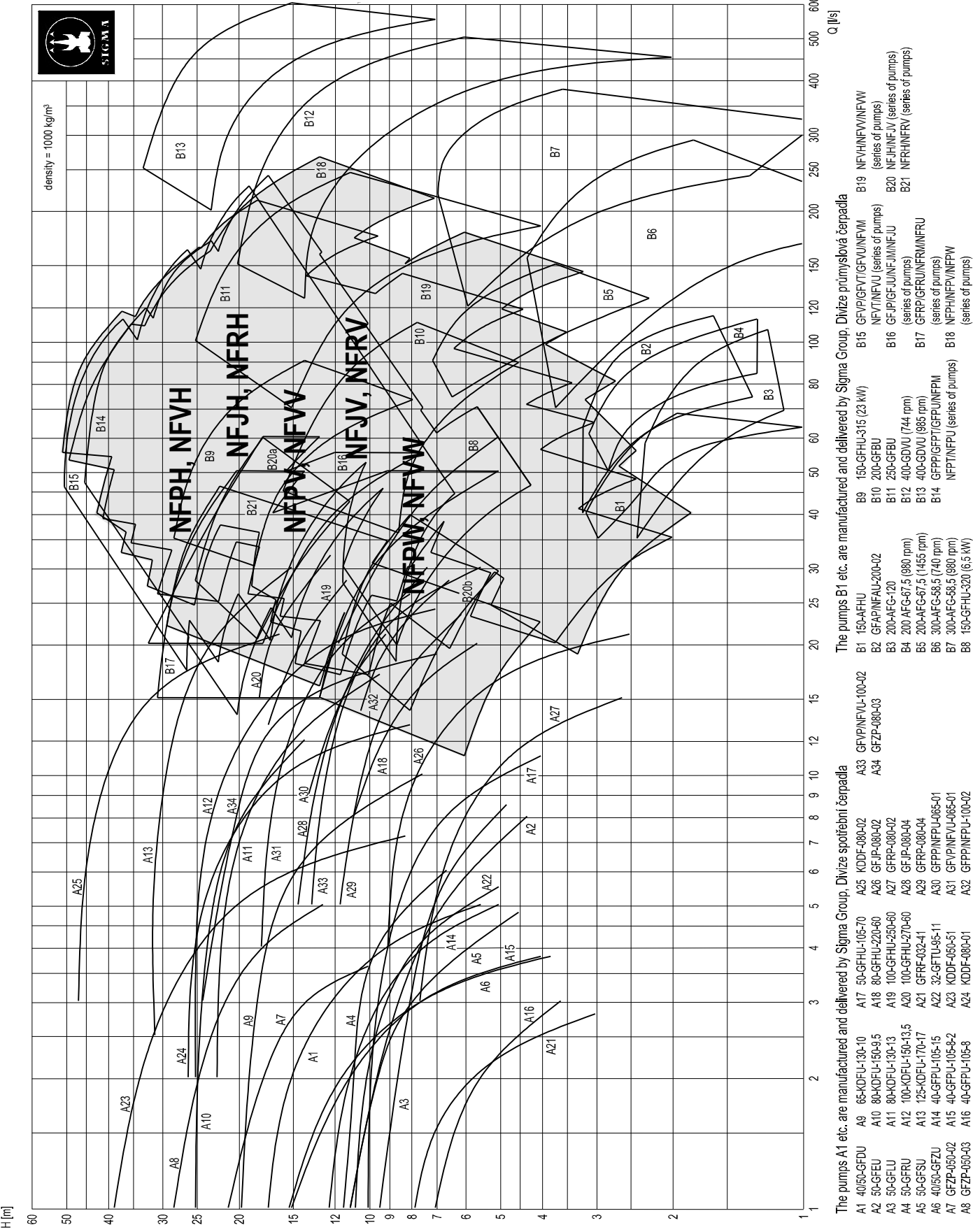
Vertical pump set with cardan shaft



Horizontal pump set on foundation frame

PERFORMANCE FIELDS COVERED BY HYDRODYNAMIC SEWAGE PUMPS

This document gives details for indicated pumps only.
For other types there are separate leaflets !



PUMP TECHNICAL SPECIFICATIONS

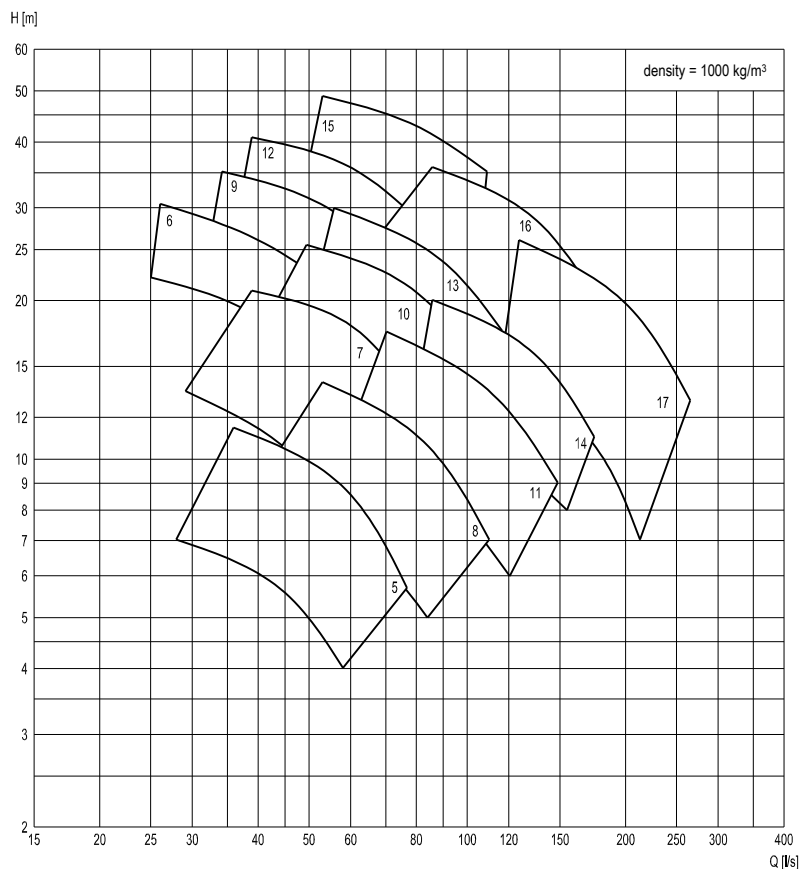
Pump type	Capacity Q _{opt} [l.s ⁻¹]		Head H _{opt} [m]		Motor output P [kW]		Impeller passageway [mm]
	at motor speed n [rpm]						
	1450	980	1450	980	1450	980	
NFPH, NFPV 150-05	57	38,5	9	4	7	2,2	71x67
NFVH, NFVV 150-05	53	36	10	4,5	7	2,2	20x53
NFPH, NFPV 100-06	40	27	26	12	15	5	62x49
NFVH, NFVV 100-06	40	27,5	29	13,2	15	4,5	14x10
NFPH, NFPV 150-07	60	40,5	18	8	14,5	4,6	66x61
NFVH, NFVV 150-07	62	41,5	22	10	16	5,5	17x48
NFPH, NFPV 200-08	81	55	11	5	12	4	ø70
NFVH, NFVV 200-08	73	50	12,5	5,6	12	3,8	20x45
NFPH, NFPW 125-09	52,5	35,5	30,5	14	22	7	66x52
NFVH, NFVW 125-09	52,5	34,5	31,5	14,5	20	6,5	17x43
NFJH, NFJV 100-09	43,5	29,5	21,5	10	15	5,5	90x90
NFRH, NFRV 100-09	34	23	26	11,5	16	5,5	ø66
NFPH, NFPV 150-10	76	51	21,5	10	22	7	71x67
NFVH, NFVV 150-10	72	49	23	10,5	20	6,5	20x53
NFPH, NFPW 200-11	110	74	13,5	6,3	20	6,4	90x87
NFVH, NFVW 200-11	102	69	14,5	6,6	19	6	25x67
NFPH, NFPW 125-12	60	40,5	36	16,5	28	9	71x57
NFVH, NFVW 125-12	65	41,5	36	17	28	9	27x46
NFPH, NFPW 150-13	88	59,5	24	11	28	9	74x69
NFVH, NFVW 150-13	85	58	28,5	13	29,5	9,5	20x53
NFPH, NFPW 200-14	133	90	16	7,2	27	8,8	ø100
NFVH, NFVW 200-14	123	83,5	17	7,8	26,5	8,5	ø41
NFPH, NFPW 150-15	80	54	43	19,5	45	15	ø61
NFVH, NFVW 150-15	90	58	45	21	50	16	ø29
NFPH, NFPW 200-16	132	89	29	13,5	50	16,5	ø77
NFVH, NFVW 200-16	121	82	33	15	52	15,5	ø35
NFPH, NFPW 250-17	196	132	20	9,5	52	16,5	ø105
NFVH, NFVW 250-17	183	124	22	10	50	16,5	ø74

Table data refer to density of 1000 kg/m³.

SEWAGE PUMPS

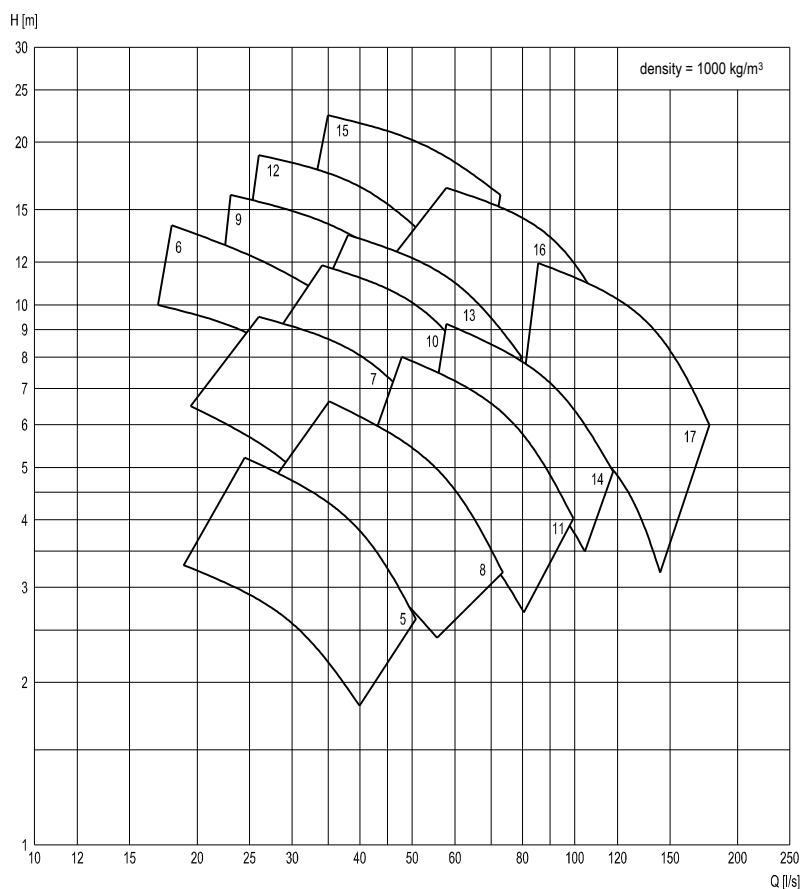
SELECTION CHART FOR PUMPS SERIES NFPH, NFPV, NFPW – 1450 rpm

Pump type	Field
NFPH, NFPV 150-05	5
NFPH, NFPV 100-06	6
NFPH, NFPV 150-07	7
NFPH, NFPV 200-08	8
NFPH, NFPV 125-09	9
NFPH, NFPV 150-10	10
NFPH, NFPW 200-11	11
NFPH, NFPW 125-12	12
NFPH, NFPW 150-13	13
NFPH, NFPW 200-14	14
NFPH, NFPW 150-15	15
NFPH, NFPW 200-16	16
NFPH, NFPW 250-17	17



SELECTION CHART FOR PUMPS SERIES NFPH, NFPV, NFPW – 980 rpm

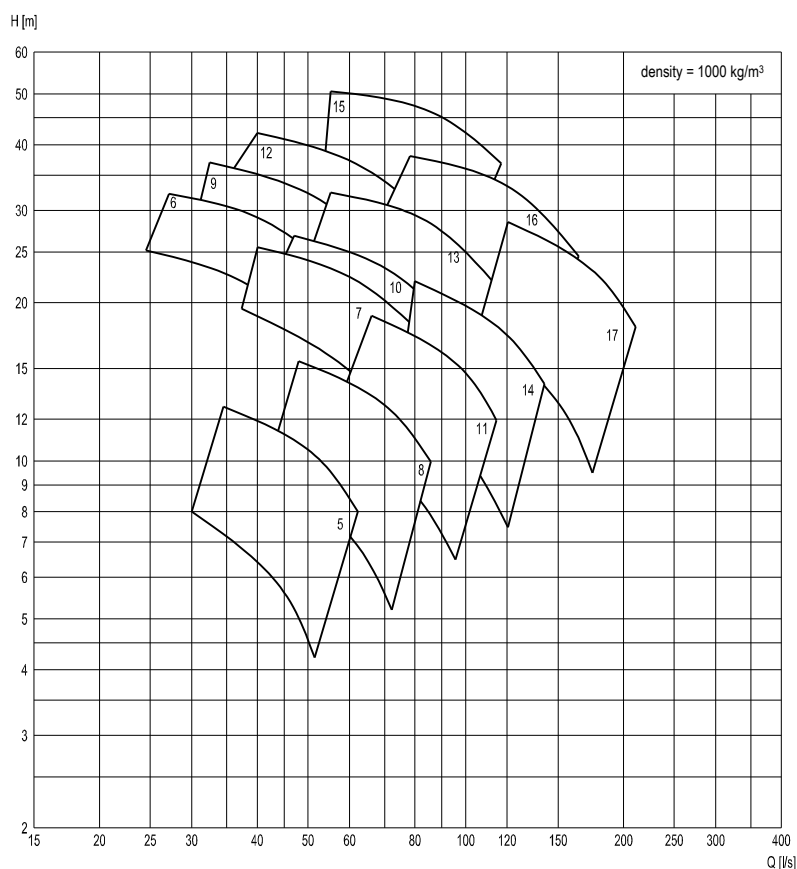
Pump type	Field
NFPH, NFPV 150-05	5
NFPH, NFPV 100-06	6
NFPH, NFPV 150-07	7
NFPH, NFPV 200-08	8
NFPH, NFPV 125-09	9
NFPH, NFPV 150-10	10
NFPH, NFPW 200-11	11
NFPH, NFPW 125-12	12
NFPH, NFPW 150-13	13
NFPH, NFPW 200-14	14
NFPH, NFPW 150-15	15
NFPH, NFPW 200-16	16
NFPH, NFPW 250-17	17



SEWAGE PUMPS

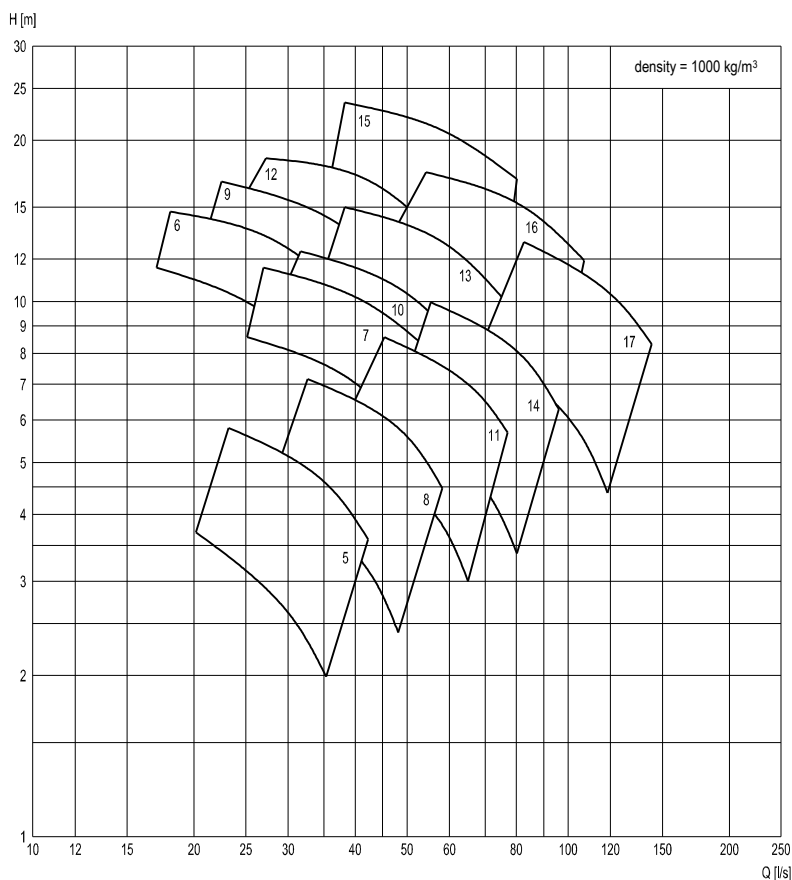
SELECTION CHART FOR PUMPS SERIES NFBH, NFBV, NFBW – 1450 rpm

Pump type	Field
NFBH, NFBV 150-05	5
NFBH, NFBV 100-06	6
NFBH, NFBV 150-07	7
NFBH, NFBV 200-08	8
NFBH, NFBV 125-09	9
NFBH, NFBV 150-10	10
NFBH, NFBV 200-11	11
NFBH, NFBV 125-12	12
NFBH, NFBV 150-13	13
NFBH, NFBV 200-14	14
NFBH, NFBV 150-15	15
NFBH, NFBV 200-16	16
NFBH, NFBV 250-17	17



SELECTION CHART FOR PUMPS SERIES NFBH, NFBV, NFBW – 980 rpm

Pump type	Field
NFBH, NFBV 150-05	5
NFBH, NFBV 100-06	6
NFBH, NFBV 150-07	7
NFBH, NFBV 200-08	8
NFBH, NFBV 125-09	9
NFBH, NFBV 150-10	10
NFBH, NFBV 200-11	11
NFBH, NFBV 125-12	12
NFBH, NFBV 150-13	13
NFBH, NFBV 200-14	14
NFBH, NFBV 150-15	15
NFBH, NFBV 200-16	16
NFBH, NFBV 250-17	17

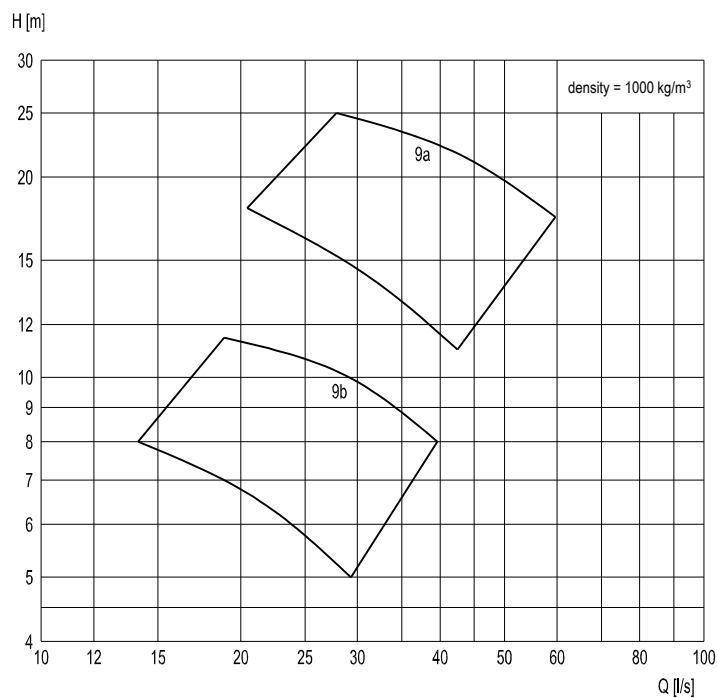


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SEWAGE PUMPS

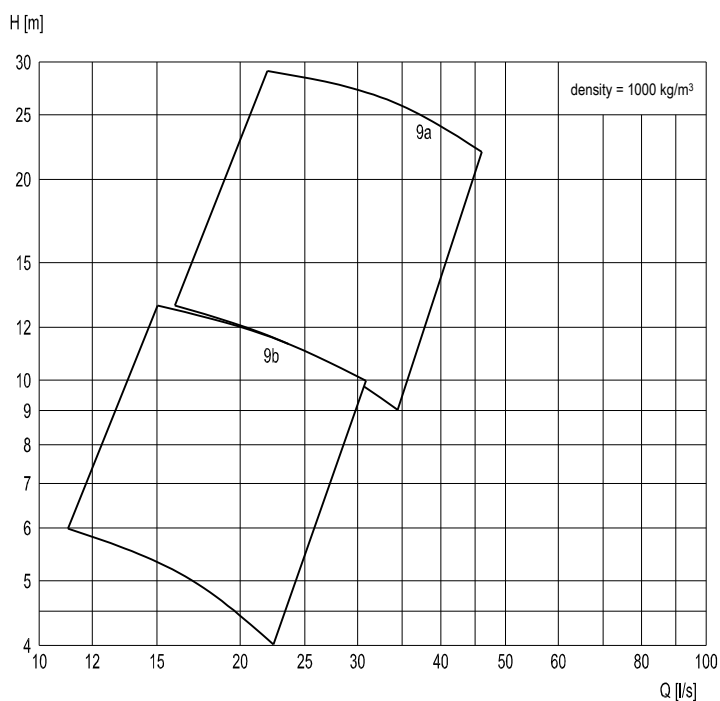
SELECTION CHART FOR PUMPS SERIES NFJH, NFJV – 1450 and 980 rpm

Pump type	Field	
	Speed [rpm]	
	1450	980
NFJH, NFJV 100-09	9a	9b



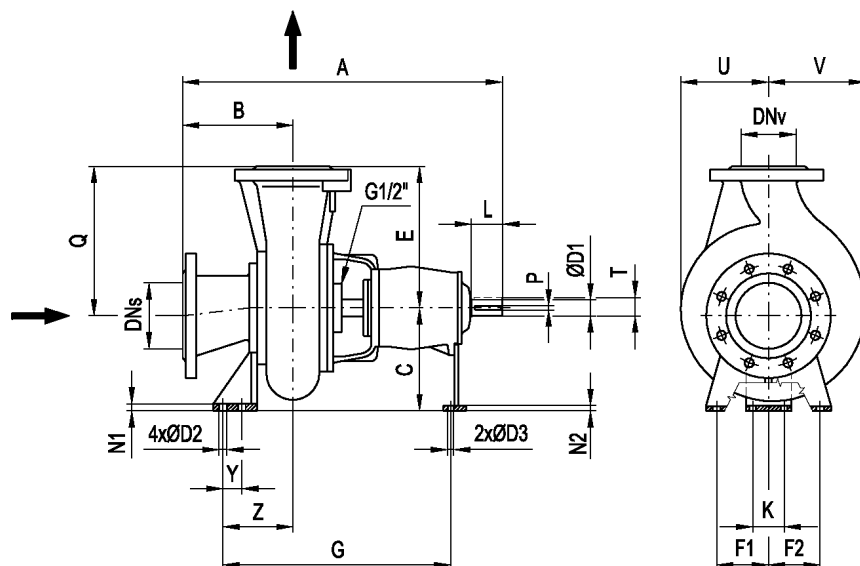
SELECTION CHART FOR PUMPS SERIES NFRH, NFRV – 1450 a 980 rpm

Pump type	Field	
	Speed [rpm]	
	1450	980
NFRH, NFRV 100-09	9a	9b



SEWAGE PUMPS

DIMENSIONAL OUTLINE DRAWING OF PUMPS SERIES NFPH, NFBH, NFJH, NFRH

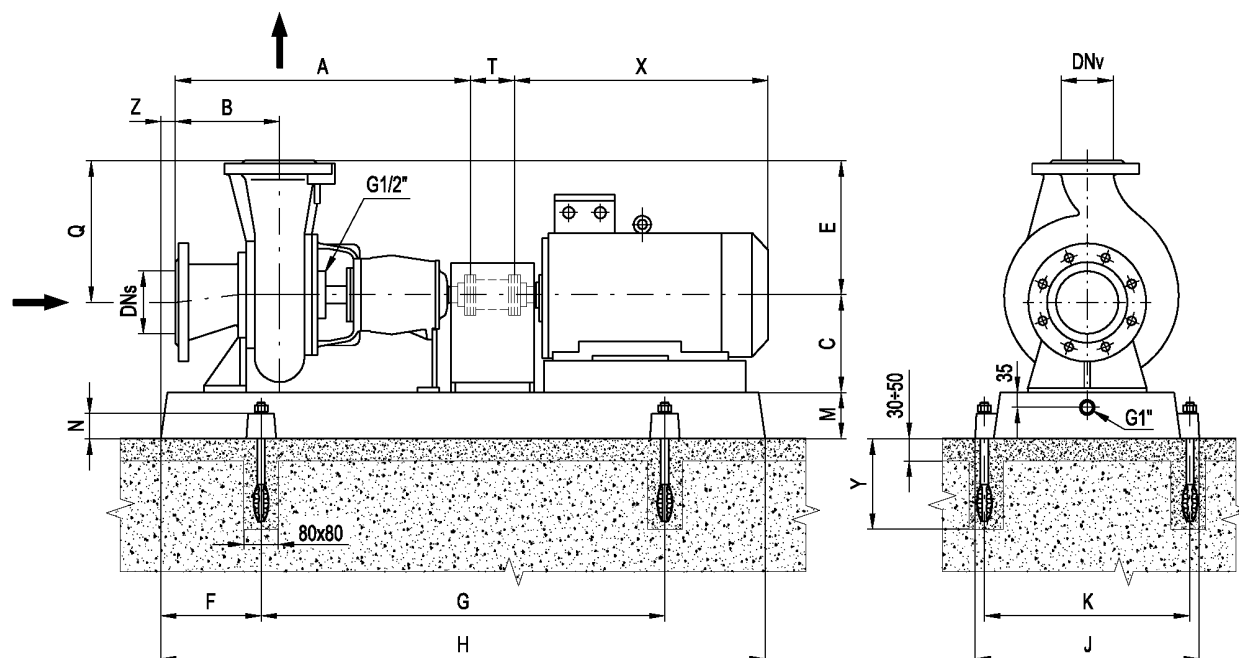


Pump type	DNs	DNv	A	B	C	D1	D2	D3	E	F1	F2	G	K	L	N1	N2	P	Q	T	U	V	Y	Z	Pump weight [kg]
NFPH 150-05	200	150	940	292	280	42	23	19	400	250	250	668	125	110	15	8	12	420	45,1	246	288	80	210	200
NFBH 150-05	200	150	940	292	280	42	23	19	400	250	250	668	125	110	15	8	12	420	45,1	246	288	80	210	195
NFPH 100-06	125	100	858	232	280	42	23	19	315	200	200	636	125	110	15	8	12	323	45,1	204	220	80	200	205
NFBH 100-06	150	100	808	232	280	42	23	19	315	200	200	546	125	110	15	8	12	322	45,1	204	220	80	200	200
NFPH 150-07	150	150	873	242	280	42	23	19	375	225	225	649	125	110	15	8	12	388	45,1	220	260	80	208	220
NFBH 150-07	200	150	873	292	280	42	23	19	375	225	225	599	125	110	15	8	12	398	45,1	220	260	80	208	215
NFPH 200-08	250	200	861	280	280	42	23	19	360	250	250	601	125	110	15	8	12	395	45,1	220	300	80	210	240
NFBH 200-08	250	200	861	280	280	42	23	19	360	250	250	601	125	110	15	8	12	395	45,1	220	300	80	210	235
NFJH 100-09	150	100	1049	290	280	48	27	19	300	170	170	814	140	110	20	8	14	318	51,5	198	217	80	245	210
NFRH 100-09	150	100	1049	290	280	48	27	19	300	170	170	814	140	110	20	8	14	318	51,5	198	217	80	245	205
NFPH 125-09	125	125	1012	237	280	48	27	19	370	225	225	795	140	110	20	8	14	380	51,5	222	240	80	210	270
NFBH 125-09	150	125	890	287	280	42	27	19	370	225	225	623	125	110	20	8	12	373	45,1	222	240	80	210	265
NFPH 150-10	150	150	1024	242	280	48	27	19	400	250	250	807	140	110	20	8	14	406	51,5	242	290	80	215	280
NFBH 150-10	200	150	902	292	280	42	27	19	400	250	250	635	125	110	20	8	12	420	45,1	242	290	80	215	275
NFPH 200-11	250	200	1102	297	355	48	27	19	530	300	300	849	140	110	20	8	14	558	51,5	320	380	80	234	295
NFBH 200-11	250	200	1102	297	355	48	27	19	530	300	300	849	140	110	20	8	14	558	51,5	320	380	80	234	290
NFPH 125-12	150	125	1011	236	280	48	27	19	390	225	225	799	140	110	20	8	14	403	51,5	238	256	80	214	350
NFBH 125-12	200	125	891	286	280	42	27	19	390	225	225	629	125	110	20	8	12	412	45,1	238	256	80	214	345
NFPH 150-13	150	150	1029	245	355	48	27	19	400	270	270	812	140	110	20	8	14	410	51,5	253	306	80	218	360
NFBH 150-13	200	150	899	295	355	42	27	19	400	270	270	632	125	110	20	8	12	414	45,1	253	306	80	218	355
NFPH 200-14	250	200	1036	292	355	48	27	19	440	325	325	797	140	110	20	8	14	460	51,5	249	345	80	243	407
NFBH 200-14	250	200	1036	292	355	48	27	19	440	325	325	797	140	110	20	8	14	460	51,5	249	345	80	243	406
NFPH 150-15	150	150	1023	200	355	60	33	19	440	250	250	838	140	140	30	8	18	446	64,2	264	284	100	244	390
NFBH 150-15	200	150	930	200	355	48	33	19	440	250	250	745	140	110	30	8	14	454	51,5	264	284	100	244	385
NFPH 200-16	200	200	1093	270	355	60	33	19	480	325	325	848	140	140	30	8	18	480	64,2	292	352	100	254	400
NFBH 200-16	250	200	1000	270	355	48	33	19	480	325	325	755	140	110	30	8	14	484	51,5	292	352	100	254	395
NFPH 250-17	300	250	1130	400	400	48	27	19	570	350	350	793	140	110	25	8	14	408	51,5	330	450	80	253	380
NFBH 250-17	300	250	1130	400	400	48	27	19	570	350	350	793	140	110	25	8	14	408	51,5	330	450	80	253	375

Flanges of both two DN DNv branches are provided with rough-finished raised face for PN 10 according to ČSN 13 1160.

SEWAGE PUMPS

DIMENSIONAL OUTLINE DRAWING OF PUMPS SERIES NFPH, NFBVH, NFBH, NFRH



Pump type	DNs	DNv	A	B	C	E	Q	T	Pump weight [kg]	Number of foundation frame								Z							
										for electric motor axial size								for electric motor axial size							
										100	112	132	160	180	200	225	250	100	112	132	160	180	200	225	250
NFPH 150-05	200	150	940	292	280	400	420	140	200		2	2	2					140	110	50					
NFBVH 150-05	200	150	940	292	280	400	420	140	195	2	2	2	2					150	140	110	50				
NFPH 100-06	125	100	858	232	280	315	323	140	205			1	1	1						150	80	50			
NFBVH 100-06	150	100	808	232	280	315	322	140	200			1	1	1						170	100	50			
NFPH 150-07	150	150	873	242	280	375	388	140	220			2	2	2						140	70	50			
NFBVH 150-07	200	150	873	292	280	375	398	140	215			2	2	2	3	3				140	70	50	150	120	
NFPH 200-08	250	200	861	280	280	360	395	140	240			2	2							150	80				
NFBVH 200-08	250	200	861	280	280	360	395	140	235			2	2							150	80				
NFBH 100-09	150	100	1049	290	280	300	318	180	210			1	3	3						50	140	60			
NFRH 100-09	150	100	1049	290	280	300	318	140	205			1	3	3	3					60	160	80	70		
NFPH 125-09	125	125	1012	237	280	370	380	180	270				3	3	3						160	80	60		
NFBVH 125-09	150	125	890	287	280	370	373	140	265				1	3	3						70	150	150		
NFPH 150-10	150	150	1024	242	280	400	406	140	280				2	3	3						50	90	80		
NFBVH 150-10	200	150	902	292	280	400	420	140	275				2	3	3						60	150	142		
NFPH 200-11	250	200	1102	297	355	530	558	180	295			4	4	4	4					220	160	70	60		
NFBVH 200-11	250	200	1102	297	355	530	558	140	290			4	4	4	4					240	180	90	80		
NFPH 125-12	150	125	1011	236	280	390	403	180	350				3	3	3	3					160	70	70	50	
NFBVH 125-12	200	125	891	286	280	390	412	140	345				2	3	3	3					70	150	150	120	
NFBH 150-13	150	150	1029	245	355	400	410	180	360				3	3	3	3					150	60	60	50	
NFBVH 150-13	200	150	899	295	355	400	414	140	355				2	3	3	3					60	150	140	120	
NFPH 200-14	250	200	1036	292	355	440	460	180	407				4	4	4	4					190	100	90	70	
NFBVH 200-14	250	200	1036	292	355	440	460	140	406			4	4	4	4	4				280	210	120	110	90	
NFPH 150-15	150	150	1023	200	355	440	446	180	390					3	3	3	3					70	60	50	50
NFBVH 150-15	200	150	930	200	355	440	454	140	385					3	3	3	3					130	130	100	50
NFPH 200-16	200	200	1093	270	355	480	480	140	400					4	4	4	4					90	90	60	50
NFBVH 200-16	250	200	1000	270	355	480	484	140	395					4	4	4	4					140	130	100	60
NFPH 250-17	300	250	1130	400	400	570	408	180	380				4	4	4	4	4				140	60	50	50	50
NFBVH 250-17	300	250	1130	400	400	570	408	180	375				4	4	4	4	4				140	60	50	50	50

SEWAGE PUMPS

Number of foundation frame	F	G	H	J	K	M	N	Y	Foundation bolt	Frame weight [kg]
1	377	1000	1754	706	650	150	50	330	M24x400	270
2	377	1000	1754	836	780	150	50	330	M24x400	290
3	352	1400	2104	836	780	150	50	430	M24x500	420
4	392	1400	2184	1006	950	150	50	430	M24x500	530

Flanges of both two DN_s, DN_v branches are provided with rough-finished raised face for PN 10 according to ČSN 13 1160.

Length X of the electric motor is to be determined as in the catalogue of particular manufacturer.

Pump-set weight is determined as sum of the following weights:

pump (as tabled)

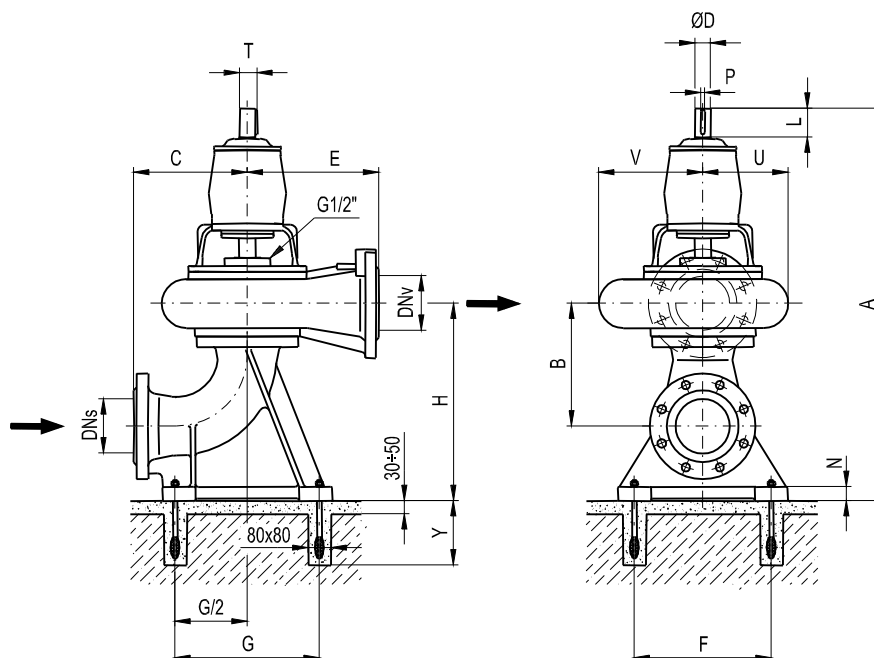
electric motor (as given in particular manufacturer's catalogue)

foundation frame (as tabled)

other accessories (i. e. coupling, coupling guard, motor pads, bolts etc.), usually ranging from 30 to 80 kg, dependent on type.

SEWAGE PUMPS

DIMENSIONAL OUTLINE DRAWING OF PUMPS SERIES NFPV, NFVV, NFJV, NFRV

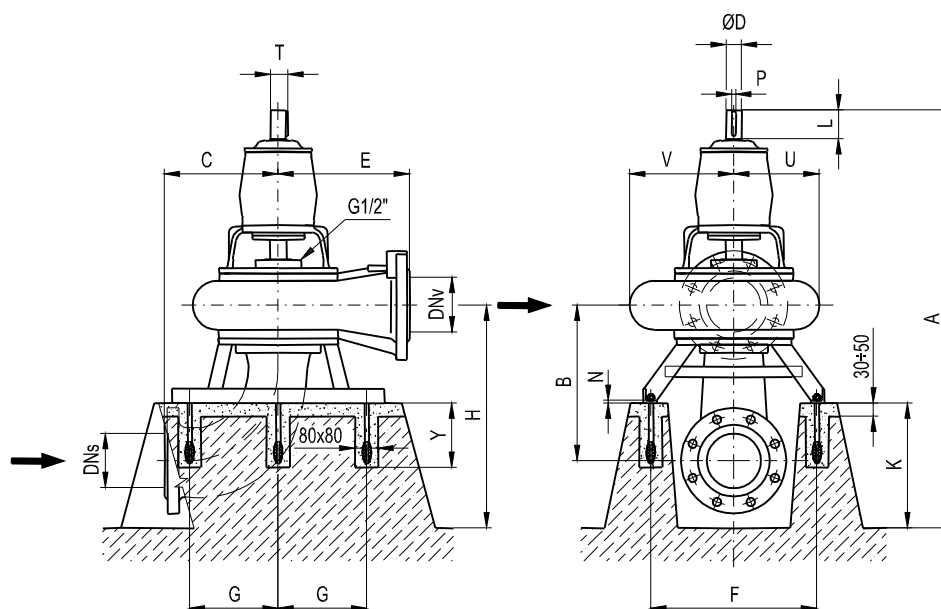


Pump type	DNs	DNv	A	B	C	D	E	F	G	H	L	N	P	T	U	V	Y	Foundation bolt	Pump weight [kg]
NFPV 150-05	200	150	1170	342	250	42	400	400	400	522	110	20	12	45,1	246	288	280	M16x320	250
NFVV 150-05	200	150	1185	342	250	42	400	400	400	537	110	20	12	45,1	246	288	280	M20x320	245
NFPV 100-06	125	100	1083	307	225	42	315	340	340	457	110	20	12	45,1	204	220	280	M16x320	260
NFVV 100-06	150	100	1088	332	250	42	315	400	400	512	110	20	12	45,1	204	220	280	M16x320	255
NFPV 150-07	150	150	1151	340	250	42	375	400	400	520	110	20	12	45,1	220	260	280	M16x320	280
NFVV 150-07	200	150	1116	340	250	42	375	400	400	535	110	20	12	45,1	220	260	280	M20x320	275
NFPV 200-08	250	200	1189	413	250	42	360	400	400	558	110	20	12	45,1	220	300	280	M20x320	300
NFVV 200-08	250	200	1189	413	250	42	360	400	400	558	110	20	12	45,1	220	300	280	M20x320	295
NFJV 100-09	150	100	1311	372	250	48	300	400	400	552	110	20	14	51,5	198	217	280	M16x320	300
NFRV 100-09	150	100	1311	372	250	48	300	400	400	552	110	20	14	51,5	198	217	280	M16x320	295
NFPV 150-10	150	150	1304	342	250	48	400	400	400	522	110	20	14	51,5	242	290	280	M16x320	350
NFVV 150-10	200	150	1147	342	250	42	400	400	400	537	110	20	12	45,1	242	290	280	M20x320	345

Flanges of both two DN_s, DN_v branches are provided with rough-finished raised face for PN 10 according to ČSN 13 1160. Besides basic position of the suction branch towards the discharge branch (see Dimensional outline drawing), another positions there are available turning the pump and the suction elbow by 45° respectively. Weight is determined for the pump including the suction elbow.

SEWAGE PUMPS

DIMENSIONAL OUTLINE DRAWING OF PUMPS SERIES NFPW, NFWV



Pump type	DNs	DNv	A	B	C	D	E	F	G	H	K	L	N	P	T	U	V	Y	Foundation bolt	Pump weight [kg]
NFPW 125-09	125	125	1340	346	225	48	370	470	250	565	480	110	16	14	51,5	222	240	290	M20x320	330
NFWV 125-09	150	125	1238	386	250	42	370	470	250	635	350	110	16	12	45,1	222	240	290	M20x320	325
NFPW 200-11	250	200	1514	466	250	48	530	600	250	709	380	110	11	14	51,5	320	380	280	M20x320	345
NFWV 200-11	250	200	1564	461	350	48	530	600	250	759	380	110	11	14	51,5	320	380	280	M20x320	340
NFPW 125-12	150	125	1434	386	225	48	390	600	250	659	300	110	16	14	51,5	238	256	290	M20x320	400
NFWV 125-12	200	125	1344	441	250	42	390	600	250	739	380	110	16	12	45,1	238	256	290	M20x320	395
NFPW 150-13	150	150	1452	395	250	48	400	600	250	668	300	110	16	14	51,5	253	306	290	M20x320	410
NFWV 150-13	200	150	1352	450	300	42	400	600	250	748	380	110	16	12	45,1	253	306	290	M20x320	405
NFPW 200-14	250	200	1503	461	350	48	440	600	250	759	380	110	11	14	51,5	249	345	280	M20x320	457
NFWV 200-14	250	200	1503	461	350	48	440	600	250	759	380	110	11	14	51,5	249	345	280	M20x320	456
NFPW 150-15	150	150	1535	396	250	60	440	550	300	712	350	140	11	18	64,2	264	284	280	M20x320	490
NFWV 150-15	200	150	1442	451	250	48	440	550	300	712	350	110	11	14	51,5	264	284	280	M20x320	485
NFPW 200-16	200	200	1615	541	350	60	480	550	300	792	450	140	11	18	64,2	292	352	280	M20x320	500
NFWV 200-16	250	200	1522	566	350	48	480	550	300	792	450	110	11	14	51,5	292	352	280	M20x320	495
NFPW 250-17	300	250	1592	572	400	48	570	600	300	862	500	110	11	14	51,5	330	450	280	M20x320	480
NFWV 250-17	300	250	1592	597	400	48	570	600	300	862	500	110	11	14	51,5	330	450	280	M20x320	475

Flanges of both two DN_s, DN_v branches are provided with rough-finished raised face for PN 10 according to ČSN 13 1160. Besides basic position of the suction branch towards the discharge branch (see Dimensional outline drawing), another positions there are available turning the pump and the suction elbow by 45° respectively. Weight is determined for the pump including the stand.